


# Emory University Hospital

## Special Isolation Unit

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To see inside Emory hospital's isolation unit with Dr. Bruce Ribner, go to <http://bit.ly/emoryisounit> 

### The private patient rooms

resemble ICU rooms, with adjustable beds, IVs, and monitors. Every procedure a patient could need, from mechanical ventilation to hemodialysis, can be performed in the unit.

**Medical staff** who are providing direct patient care use the locker room to change into full-body protective suits and masks, which shield them from blood and bodily fluids.

**Family members** are able to speak with patients through standard glass windows in the unit; patients have access to phones and laptop computers.

**A dedicated lab** was built specifically for use with the isolation unit that has the capacity to perform blood counts, routine chemistries, blood gas measurements, urinalysis, and tests for a variety of infectious agents.

**All liquid waste** is disinfected and flushed, and disposable waste is autoclaved and incinerated. At the peak of the Ebola patients' illnesses, up to 40 bags a day of medical waste were produced.

ILLUSTRATION BY DAMIEN SCOGIN

**Emory's special isolation unit was built in cooperation with the CDC** to treat patients with lethal, contagious diseases acquired in the field or in a lab. It is one of four such high-level biocontainment units in the US. The other three are at the NIH in Maryland, Rocky Mountain Laboratories in Montana, and the University of Nebraska Medical Center. The units are set up to contain SARS, smallpox, tularemia, plague, viral hemorrhagic fevers, and drug-resistant illnesses, among other infectious diseases.

Emory's six-room unit consists of two patient rooms that resemble ICU hospital rooms, two connected patient support rooms with toilets and showers, a large anteroom in the middle, a staff dressing room with lockers and shower, and a biosafety cabinet for specimen processing. A lab dedicated to the unit was established just outside the suite.

The air pressure in the unit is negative, so the air flows from the hallway to the anteroom to the patient room (this

means the doors don't need to be sealed, since airflow goes into the patient rooms, not out.) The rooms have 20 air changes per hour, so that all infectious particles are rapidly removed, and air from the unit is HEPA-filtered before being sent out through the exhaust system.

There is a vestibule where select staff members, highly trained in infection control, suit up before entering the room. A plate glass window and communication system allows non-suited health care workers and family members to safely observe and visit with the patients from as close as a few inches away.

All disposable waste is autoclaved (sanitized with pressurized steam) and then incinerated, from Tyvek suits to food trays. Liquid wastes are disinfected with bleach or detergents for more than five minutes and then flushed down the toilet. Equipment that is not disposable, like the powered air purifying respirator (PAPR), is disinfected. ■